

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte JAMES F. CHESKO Sr., YIFAN GUO, BONGTAE HAN  
and CHUN K. LIM

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Appeal No. 96-1850  
Application No. 08/218,000<sup>1</sup>

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ON BRIEF

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Before HAIRSTON, BARRETT and TORCZON, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 9.

The disclosed invention relates to a box for a portable moire interferometer.

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<sup>1</sup> Application for patent filed March 25, 1994.

Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A portable moire interferometer, comprising:

a box having first, second, third, fourth, fifth and sixth walls, said first and second walls, said third and fourth walls, and said fifth and sixth walls, respectively, being substantially parallel to one another;

a reference diffraction grating which is contained within the interior of said box and substantially rigidly affixed to said first wall;

at least first, second and third apertures in said second wall, facing said reference diffraction grating, said third aperture being positioned between said first and second apertures;

first means, extending through a hole in a wall of said box, for guiding a beam of coherent light from the exterior of said box to the interior of said box;

second means, located within the interior of said box, for directing said beam of coherent light toward said reference diffraction grating, to thereby produce at least first and second diffracted, coherent beams of light; and

third means, also located within the interior of said box, for directing said first and second diffracted, coherent beams of light toward, respectively, said first and second apertures in said second wall, said third means being adjustable from the exterior of said box so that the directions of said first and second diffracted, coherent beams of light may be adjusted from the exterior of said box.

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The references relied on by the examiner are:

Perkins et al. (Perkins)	4,726,657	Feb.
23, 1988		
Mollenhauer et al. (Mollenhauer), "A Compact, Economical, and Versatile Moire Interferometer," <u>Proceedings of the 1993 SEM Spring Conference on Experimental Mechanics</u> , Bethel, Connecticut, pp. 954 through 963. <sup>2</sup>		

Claims 1 through 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Mollenhauer in view of Perkins.

Reference is made to the brief and the answer for the respective positions of the appellants and the examiner.

#### OPINION

We have carefully considered the entire record before us, and we will reverse the obviousness rejection of claims 1 through 9.

Mollenhauer discloses a moire interferometer mounted on an aluminum ring (Figure 2). Appellants explain (specification, page 5) that a problem with such a moire interferometer is that all of the optical elements are exposed to the surrounding air, and that the moire interferometer is

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<sup>2</sup> The citation for this publication was reproduced from appellants' disclosure (specification, page 5).

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"subject to undesirable changes in refractive index associated with air currents."

The examiner cites Peterson to show that it is known to mount optical components in a box (column 2, lines 26 through 28). Based upon the teachings of Peterson, the examiner concludes that it would have been obvious to one of ordinary skill in the art to enclose the moire interferometer disclosed by Mollenhauer in a box because "it is quite beneficial to enclose interferometer structures in order to protect the optical elements from external stresses such as temperature" (Answer, page 3). We agree.

With respect to the claimed apertures in the box, the examiner indicates (Answer, page 3) that Perkins "teaches placing an interferometer within a rectangular enclosure having several apertures (130, 145, 146, 147, 148) for permitting light to enter and exit the enclosure." According to the examiner (Answer, pages 3 and 4), "[i]t would therefore have been obvious to provide apertures in the enclosure wall, adjacent to the specimen grating, to permit the light beams to exit the box through separate apertures, strike the specimen grating, and return into the box through a center aperture."

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We agree with the examiner that the light has to exit the box to strike the specimen grating. We do not, however, agree with the examiner that the exit point in the box for the light has to be in the configuration claimed by appellants. The aperture teachings of Perkins are of no help because the apertures 144 and 145 in the outer wall of the box (Figure 7) are located there to support shafts that extend into the box (column 6, lines 43 through 48). The opposite wall of the box has only one aperture 130 for entry of radiation 100 (column 6, lines 22 through 26) (Brief, page 6). The only teaching of record that shows the claimed configuration of the apertures is appellants' disclosed and claimed invention, and it is not available to the examiner in an obviousness determination.

In summary, the 35 U.S.C. § 103 rejection of claims 1 through 9 is reversed because the applied references neither teach nor would they have suggested to one of ordinary skill in the art the claimed configuration of the apertures in the box that houses the portable moire interferometer.

In light of the reversal of the obviousness rejection, we will not offer any comments on appellants' evidence of commercial success in the affidavit attached to the brief.

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DECISION

The decision of the examiner rejecting claims 1 through 9  
under 35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON	)	
Administrative Patent Judge	)	
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	)	
	)	
	)	BOARD OF PATENT
LEE E. BARRETT	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
RICHARD TORCZON	)	
Administrative Patent Judge	)	

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**JENINE GILLIS**

Appeal No. 96-1850  
Serial No.

08/218,000

Judge HAIRSTON

Judge BARRETT

Judge TORCZON

Received: 26 Aug 98

Typed: 26 Aug 98

DECISION: REVERSED

Send Reference(s): Yes No  
or Translation(s)

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Remanded: Yes No

Brief or Heard

Group Art Unit: 2505

Index Sheet-2901 Rejection(s): \_\_\_\_\_

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